BIOSECURITY OF SWINE FARMS RELATED TO PRRS INFECTION

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Objetive

To describe the biosecurity measures applied to some farms from Catalonia and Aragon, relating them to their PRRS status.

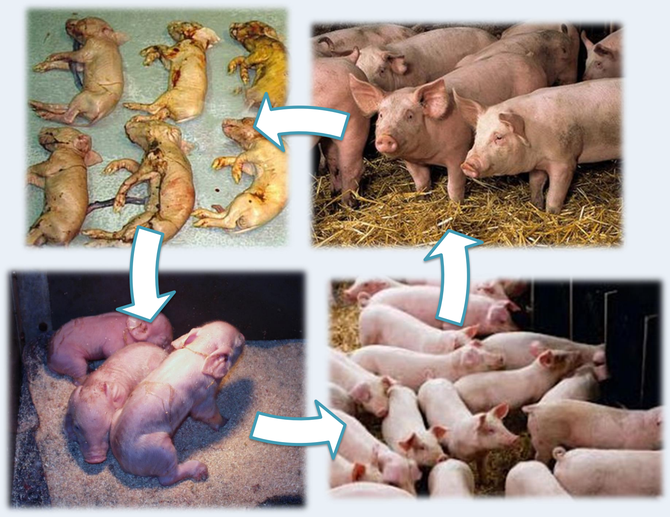


Figure 1. Transmission and clinical signs of PRRS outbreak

Material and methods

A set of 78 questionnaires obtained from swine farms located in Catalonia and Aragon, was analyzed.

Questions have been grouped in three parts:

1. Farm history
2. Biosecurity measures regarding on the herd.
3. Biosecurity measures regarding on the management and facilities.

The PRRS sanitary status was defined as stable (uncertain shedding status and positive exposure status with absence of clinical signs in the breeding-herd population and a lack of detectable viremia in sampled weaning-age pigs) and Unstable (positive shedding and exposure status) .

Results and Discussion

	Frequency (%)
Categorization farms:	
- Stable	49 (78)
- Unstable	14 (22)
Replacement stock:	
- Auto-replacement	17 (22)
- Mixed	4 (5)
- External	56 (72)
Number replacement stock source:	
- 1	50(64)
- 2	8 (10)
- 3	1 (1)
Sanitary state of source farms:	
- Stable with vaccination	17 (22)
- Negative	39 (50)
- DK/NR	4 (5)
Quarantine location:	
- Building outside the perimeter of the farm.	13 (17)
- Building inside the perimeter of the farm.	38 (49)
- Building with the rest of the farm animals.	10 (13)
- Others	10 (13)
Contact time replacement-farm (weeks):	
- 0-7	26 (33)
- 8-14	33 (42)
- >14	2 (3)
Replacement adaptation to PRRS:	
- Vaccination	75 (96)
- Deliberate infection	11 (14)
Immunity verification of replacement (11 answers):	
- No	68 (87)
- PCR	3 (4)
- Serology	2 (3)
- Serology+ PCR+ELISA	5 (6)
Elimination policy of weak-born:	
- Yes	26 (33)
- No	27 (35)

Table 1. Summary of the biosecurity measures applied in herd.

Results and Discussion

Table 1 shows that 78% of the farms are stable. Most of these farms (72%) have external replacement lifestock and a single replacement stock source (64%). Moreover the main sanitary status of source farms is PRRS negative (50%) or stable with vaccination (22%), which could mean that farmers know about the importance of gilts introduction on the PRRS outbreaks.
However only 17% of the recipient farm have the quarantine building outside the farm perimeter.

Regarding to the immune status, 96% of the farms vaccinate against PRRS in quarantine, but 33% of them wait less than 14 days before to create an appropriate immunity and 87% don't verify this immunity.

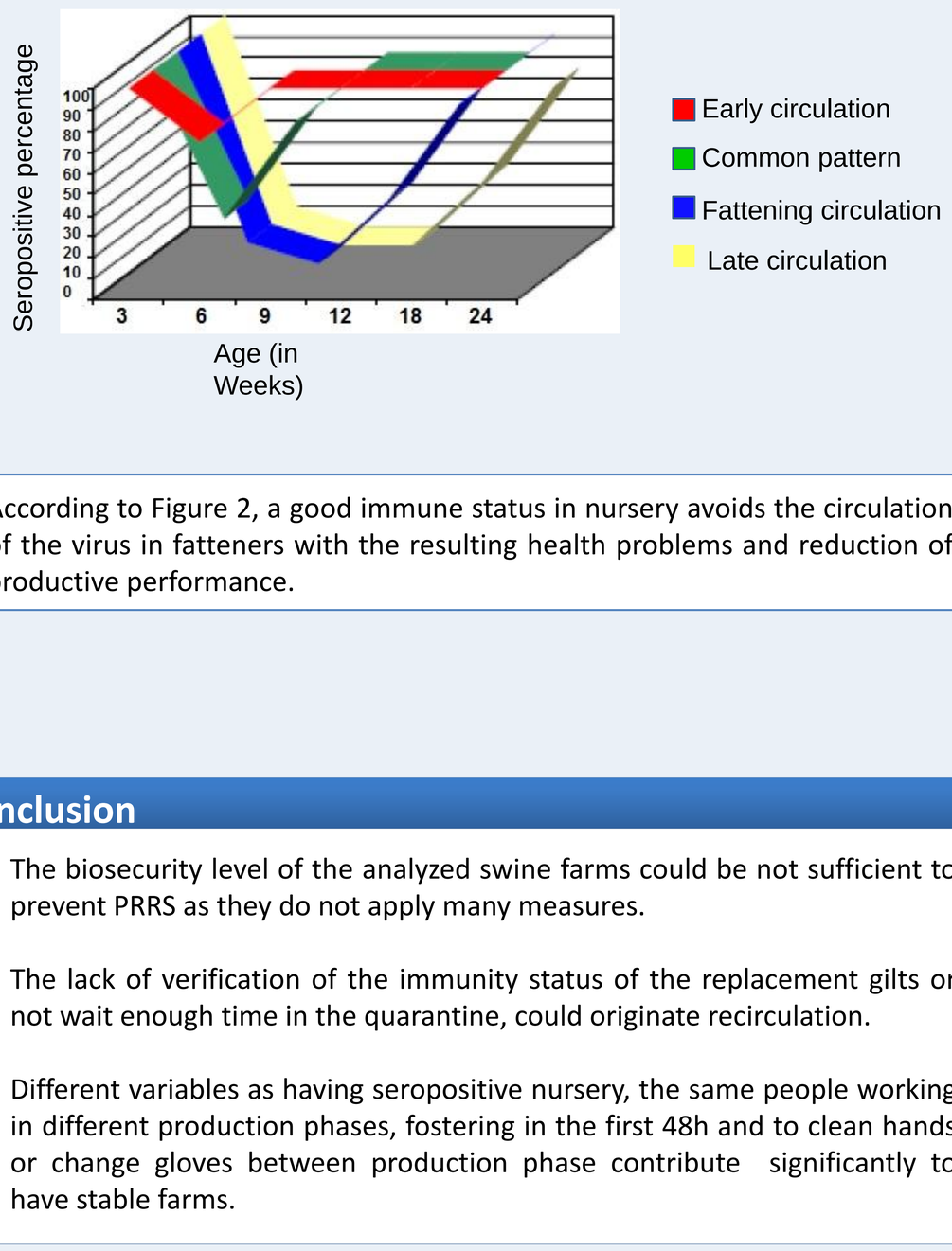
Only 35% apply an elimination weak-born policy.

	P
Seropositive nursery (9 week serology)	<0.001
Presence of an office	0.011
Labor working in different production phases (including replacement)	0.024
Fostering policy (<48h)	0.033
Obligation to clean hands or change gloves when entering / leaving each production phase	0.039

Table 2. Statistical significant results comparing the PRRS status and the different variables

Table 2 shows that the main significant result is to achieve a seropositive status in the nursery. In addition, there are other significant variables that can help to achieve a stable status in the farm.

Figure 2. Immunity developement of post-weaning piglets.



According to Figure 2, a good immune status in nursery avoids the circulation of the virus in fatteners with the resulting health problems and reduction of productive performance.

Conclusion

1. The biosecurity level of the analyzed swine farms could be not sufficient to prevent PRRS as they do not apply many measures.

2. The lack of verification of the immunity status of the replacement gilts or not wait enough time in the quarantine, could originate recirculation.

3. Different variables as having seropositive nursery, the same people working in different production phases, fostering in the first 48h and to clean hands or change gloves between production phase contribute significantly to have stable farms.